



ELEKTRA



GRINDING MACHINES FROM 1921

TACCHELLA

UNIVERSAL GRINDER

ELEKTRA 700

ELEKTRA 1200

ELEKTRA 1700



INTEGRATED GRINDING
SOLUTION

GB



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TACCHELLA UNIVERSAL GRINDING MACHINE – ELEKTRA 700 – 1200 – 1700

NEW TACCHELLA ELEKTRA MORE COMPACT AND ACCURATE

Configurable tool

The new universal grinder **IMT Tacchella Elektra** is optimal solution for all grinding machines whose strong point is manufacturing versatility. **Elektra** is the configurable tool for the most varied of grinding requirements on shafts, tool holders, general mechanics, punches, gear pumps, etc. be they single workpieces, small or large batches, including multi-diameter processing or interpolations. There are no less than 27 models available combining sizes, versions and height points, all further customized. The brand new workhead driven by a built-in motor (C-axis) and the new hydraulic tailstock allow this machine to grind round, not round and polygonal workpieces weighing up to **350 Kg** between centers, with a very high degree of accuracy. The range can be used for a **grinding length of 600, 1140 and 1640 mm** with center height of **180, 230 and 260 mm**, and is equipped with a B Torque axis for automatic positioning of the wheel holder head, available in five different versions, programmable at will through the Fanuc32i CNC (or SIEMENS 840D sl opt.).

From Elektra's success the evolution of the species

The **Elektra** range is founded on the success of the **Elektra-evo**, from which it inherits its configurability and flexibility, preserving its concept and adding sophisticated innovations to it, such as the system to monitor maintenance (it signals any maintenance that needs to be performed) or the **ENERGY SAVING** system to lower electrical energy consumption: all by just simply pressing a button. **Elektra** is suited for a number of sectors: **general mechanics, electric motors, tool holders**, etc. Thanks to its broad range of accessories, it allows users to identify the best manufacturing modes, ensuring satisfaction of even the most demanding customers.

Multi-brand synergies

Designed with the most modern technology, the new **IMT Tacchella Elektra** combines an incredibly short cycle time with a fast re-tooling process, which is the fruit of upgrades introduced in the new and intuitive software. The new **Elektra** uses a technological platform born out of the team work of engineers of the entire IMT Group and which is shared in common by its marketed brands, ensuring an ideal price: quality ratio and brief delivery times.

Success guaranteed

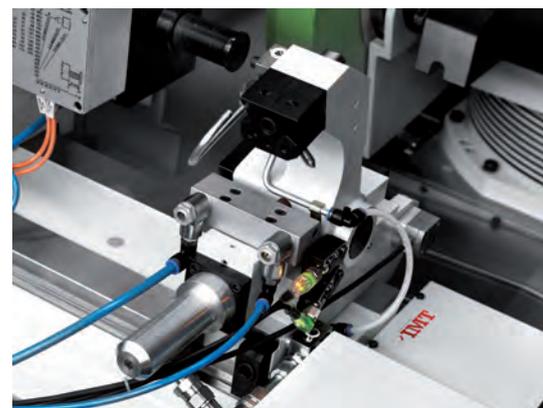
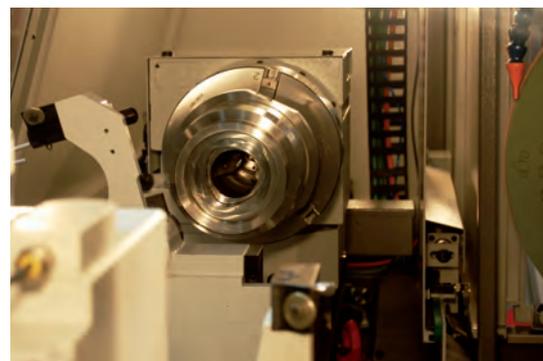
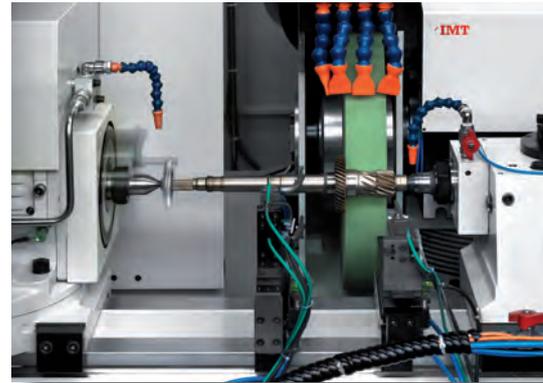
Improved surfaces, improved dimensional tolerances, improved repeatability. With the **new X axis grinding wheel carriage** made of stabilized iron castings and sliding movement on roller recirculating sliders along tempered guides, mechanism which ensures greater stiffness and better slide. **With direct drive transmission** thanks to preloaded, high precision **recirculating ball screws** built-in to the Brushless engine (which lowers the need for extraordinary maintenance operations while making them easier). With control via absolute optical linear encoders.

Minimized set-ups

The new interactive operator interface **"Tool Operator Package"** installed to the digital control system, simplifies the part-program creation process, making any adjustments that need to be made easier and more accessible. Moreover, all the accessories of the series (post-process, vibration sensors, self-centering rests, automation) are directly managed by the interface.

The new Elektra series

To limit consumptions means to achieve eco-sustainability or, simply put, to safeguard the environment. With the **ENERGY SAVING** system to lower electrical energy consumptions, all you have to do is "press a button". But replacing a filter at the right moment is also important, and with the **Maintenance Operator Package**, it's easier. This is the new driving concept behind the **Elektra** series.





BED

The bed of the new **Elektra** series is a single structure in stabilized iron casting with peripheral channels for collecting the liquid refrigerant. The structure has been developed using the latest 3D technology of parametric modeling, and has been verified with FEM analysis.



GRINDING WHEEL CARRIAGE (X axis)

The grinding wheel carriage slides of the new **Elektra** series is on tempered guides with preloaded roller sliders. Movement ensured by means of high precision recirculating ball screw directly coupled to the AC BRUSHLESS engine with digital adjustment. Movement control with absolute optical linear encoder measuring system.



TABLE (Z axis)

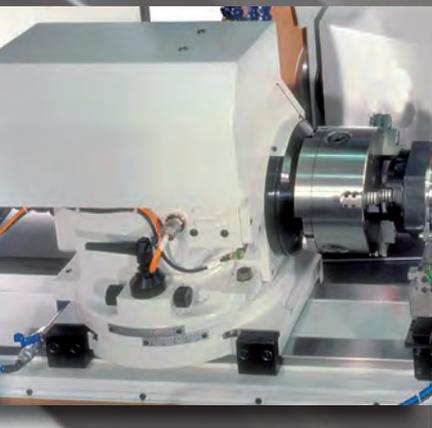
The table of the new **Elektra** series is on prismatic-plane guides with interposed anti-friction material (SKC), with improved features to get rid of stick-slip phenomena.

Movement ensured via recirculating ball screw coupled with a co-axial joint to the AC BRUSHLESS engine with digital adjustment. Movement control with absolute optical linear encoder measuring system (optional feature).



TAILSTOCK

The tailstock of the new **Elektra** series is manually driven or can be automated through push-button and pedal, and is equipped with a safety device controlling clamping between centers and axial load adjustment. It also features a device for workpiece cylindricity micrometric adjustment, which is built in the tailstock, together with a pneumatic system, which helps tailstock movement on table.



WORK-HEAD

The workhead of the new **Elektra** series in adjustable base with micrometric correction device, table locked tight with self-aligning system to make cross-wise repositioning operations easier.

Rotating spindle on extra-precision bearings, with ASA connections for the workpiece-gripping tools. Continuous speed variation controlled by digital AC BRUSHLESS engine.

THE UNITS

GENERAL PRECISION ENGINEERING

The new **Elektra** series features unparalleled grinding accuracy and speed for round, not round and polygonal workpieces, like punches and bushes.

The new **Elektra** grinds punches and bushes with the utmost precision.



SHAFTS

The new **Elektra** series is suited for completely grinding shafts used in most industrial applications (automotive, textile, hydraulic, etc.), with a single set-up.

The new **Elektra** grinds shafts with the utmost precision.



SPINDLES

The new **Elektra** series perfectly grinds machine tool mechanical parts like spindles.

The new **Elektra** grinds spindles for any application with the utmost precision.



TOOL HOLDERS

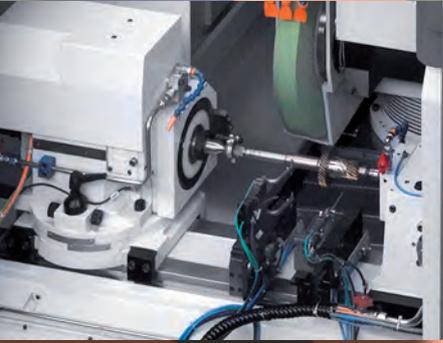
Designed to provide high-precision machining of parts having a complex geometry, the new **Elektra** series grinds tool holder, clamp holder and cutter holder spindles.

The new **Elektra** grinds a whole range of tool holders with the utmost precision.



APPLICATIONS

ELEKTRA U



BASIC SOLUTION FOR EXCELLENT PERFORMANCE

Designed relying on cutting-edge technology, and on the experience and synergy of all designers of the IMT group, the new **Elektra U** version not only ensures very short cycle times, but also allows for a fast set-up change, thanks to the optimized response of the new, user-friendly software. As the evolution of the successful project that revolutionized standard workshop grinders offering with an unprecedented series, **Elektra** is now brand new, both in the mechanical construction and in the control units. **Elektra U** ensures reliability, precision, cost-effectiveness and protection of the environment.



DEDICATED ASSEMBLIES

ADJUSTABLE WHEEL HOLDER (B-AXIS)

The new **Elektra U** version can be equipped with two grinding wheels for external diameters, adjustable by means of a manual turret, and with an electro-spindle that can be set for internal grinding (LR/I Configuration). Thanks to automatic "QuickClamp" (unclamp/clamp device), independent spindle cooling unit and wheel dynamic balancing devices built in spindle nose, **Elektra U** is the best solution for excellent performance.



APPLICATIONS

SPECIAL TOOLS

The new **Elektra U** version is perfect for grinding hard-faced special tools (cutters, reamers, broaches, etc.).



MOULDS AND EQUIPMENT

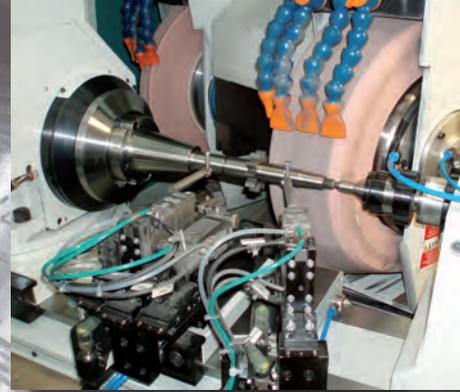
The new **Elektra U** version is perfect for grinding mechanical components for moulds, dies and equipment, such as guide rings, normalized parts, bushes, spindles and flanges.

AVAILABLE VERSIONS

ELEKTRA UA

THE AUTOMATED SOLUTION

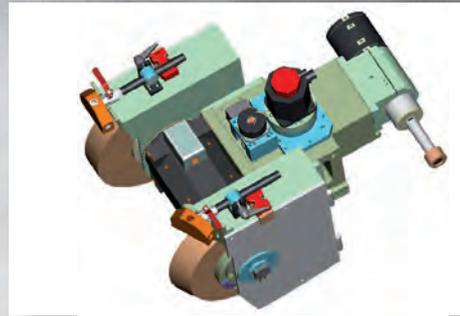
Designed relying on cutting-edge technology, and on the experience and synergy of all designers of the IMT group, the new **Elektra UA** version not only ensures very short cycle times, but also allows for a fast set-up change, thanks to the optimized response of the new, user-friendly software. As the evolution of the successful project that revolutionized standard workshop grinders offering with an unprecedented series, **Elektra** is now brand new, both in the mechanical construction and in the control units. **Elektra UA** ensures top performance, cost-effectiveness and protection of the environment.



DEDICATED ASSEMBLIES

ADJUSTABLE WHEEL HOLDER (B-AXIS)

The new **Elektra UA** version can be equipped with two grinding wheels for external diameters and with an electrospindle for internal grinding (LR/I Configuration), both programmable through a CNC-controlled automatic turret (B-Axis 0,0001°). Thanks to automatic "QuickClamp" (unclamp/clamp device), independent spindle cooling unit and wheel dynamic balancing devices built in spindle nose, **Elektra UA** is the best solution for excellent performance.



APPLICATIONS

PUMP GEARS

The new **Elektra UA** version is perfect for grinding mechanical parts like pump gears, used by most industries (automotive, food, plastic, petrochemical, etc.).



APPLICATIONS

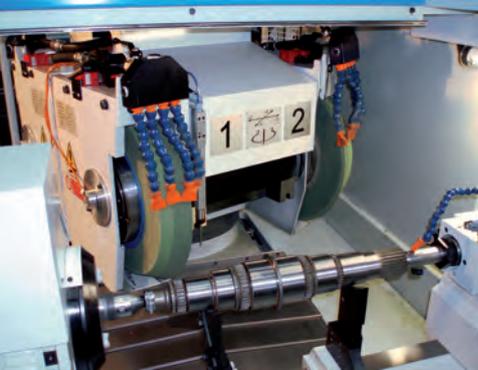
PUNCHES

The new **Elektra UA** is perfect for grinding high precision mechanical parts like punches. Operations are implemented thanks to C-axis.



AVAILABLE VERSIONS

ELEKTRA UA PLUS



TOP OF THE RANGE

Designed relying on cutting-edge technology, and on the experience and synergy of all designers of the IMT group, the new **Elektra UA PLUS** version not only ensures very short cycle times, but also allows for a fast set-up change, thanks to the optimized response of the new, user-friendly software. **Elektra UA PLUS** is equipped with automatic turret featuring two grinding wheels for external diameters, programmable through the brand new Fanuc32i CNC (B-Axis 0,0001°), and driven by two spindles (allowing installation of up to 4 wheels for grinding external diameters) and a spindle that can be set for internal grinding (LR1 Configuration).



DEDICATED ASSEMBLIES

MENU-GUIDED PROGRAMMING SOFTWARE

The new **Elektra UA PLUS** is equipped with TOP (Tool Operator Package) interactive software that works in Windows environment (**UA and PLUS**) controlling the automatic grinding cycles: roughing, semi-finishing, finishing and super-finishing, in plunge, multiplunge and oscillation cycles. Simple and guided teach-in of the X and Z axes key points; possibility to grind manually or using an automated system. Diamond dressing with diamond increment compensation programmable during cycle or selectable for n workpieces. "±" buttons to make any required correction while grinding applicable to every single diameter or to all. Wheel data and grinding program storage system.



APPLICATIONS

POLYGONAL, THREADED AND CAPTO PARTS

The new **Elektra UA PLUS** is suitable for machining complex parts such as dies, shafts featuring multiple machining and tool holders of the CAPTO type.



AVAILABLE VERSIONS

ELEKTRA UA PLUS

"TAILORED" SOLUTIONS

The new **Elektra UA PLUS** can be set according to customer requirements to obtain "tailored" grinding cycles. Wheel holder head can be set to perform several operations such as:

- 1 external grinding wheel to the left and 1 external grinding wheel to the right on 2 spindles, plus 1 internal unit (L/R Configuration);
- 2 wheels to the left on two spindles (L/L Configuration);
- 1 wheel to the right plus 2 internal units (R/I Configuration);
- 4 external grinding wheels on 2 spindles (LR/LR Configuration).

DEDICATED ASSEMBLIES

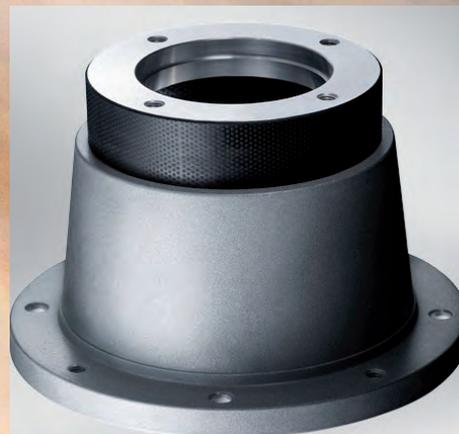
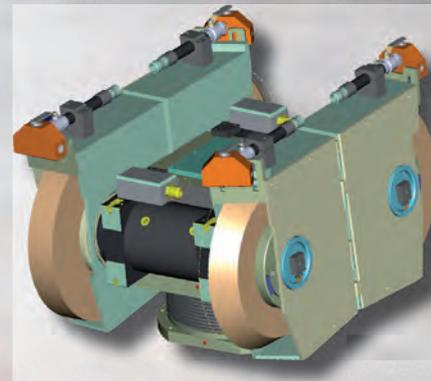
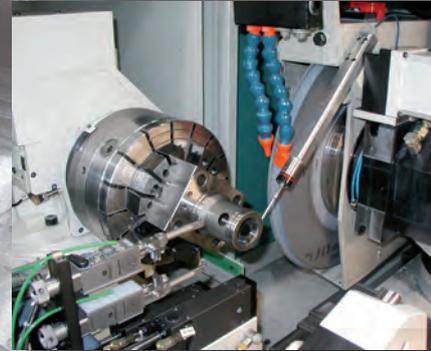
ADJUSTABLE WHEEL HOLDER (B-AXIS)

The new **Elektra UA PLUS** version is equipped with a wheel holder assembly (B-axis), having a resolution of $0,0001^\circ$, for automatic orientation to any angle position, programmable in the range $+20^\circ$ to -195° , for straight and spiral external, and internal grinding. With automatic "QuickClamp" (unclamp/clamp device).

APPLICATIONS

HYDRAULICS

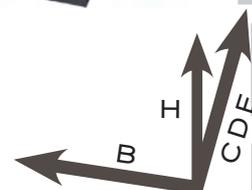
The new **Elektra UA PLUS** version is perfect for grinding hydraulic valves and pumps.



AVAILABLE VERSIONS

ELEKTRA

TACCHELLA



 **IMT GRINDING GROUP**

| TECHNICAL SPECIFICATIONS | | | | |
|---|-------------------------------------|------|-------|-------|
| CHARACTERISTIC DATA | VERSIONS | | | unit |
| | 700 | 1200 | 1700 | |
| Distance between the centres | 700 | 1200 | 1700 | mm |
| Max. grindable length (left wheel at 0°) | 600 | 1140 | 1640 | mm |
| Max. grindable length (right wheel at 30°) | 600 | 950 | 1450 | mm |
| Center height | 180 [230/260] ¹ | | | mm |
| Max. weight between the centers | 120 [250/350] ¹ | | | kg |
| Total installed power (approx.) | 27/30 | | | kW |
| Machine weight, excluding accessories (approx.) | 6000 | 6500 | 7500 | kg |
| Standard Workhead | | | | |
| Attachment for chucking machining | ASA 5 | | | - |
| Internal connection | M5 | | | - |
| Speed variation | 10 ÷ 700 | | | rpm |
| Spindle torque | 36 | | | Nm |
| Roundness precision in live grinding | 0,0004 | | | mm |
| Adjustability to the horizontal plane | ± 10° | | | ° |
| "X" Axis | | | | |
| Max. travel | 400 | | | mm |
| Max. speed | 12 | | | m/min |
| Brushless motor torque | 8 | | | Nm |
| Axis resolution | 0,0001 | | | mm |
| "Z" Axis | | | | |
| Max. travel | 900 | 1330 | 1830 | mm |
| Max. speed | 12 | | | m/min |
| Brushless motor torque | 8 | | | Nm |
| Axis resolution | 0,0001 | | | mm |
| Upper table swivel | 0°-9° | | 0°-7° | ° |
| External wheel carriage | | | | |
| Max. wheel diameter | 508x80 (100) x 203,2 | | | mm |
| Wheel spindle power | 8,2 | | | kW |
| Wheel peripheral speed (standard) | 50 | | | m/sec |
| Tailstock | | | | |
| Sleeve diameter | 60 (75) ¹ | | | mm |
| Sleeve travel | 35 (40/70) ¹ | | | mm |
| Fitting taper | M4 | | | - |
| Cylindricity micrometric adjustment | ±0,1 | | | mm |
| Wheelhead Orientation | | | | |
| Manual (U) - Automatic (UA - UA PLUS) | -15° +195° | | | ° |
| Internal wheel carriage | | | | |
| Spindle diameter | 100/120 | | | mm |
| Wheel motor power | 6/15 | | | kW |
| Standard range of revolution | 10000 ÷ 30000 [120000] ¹ | | | rpm |
| Machine dimensions | | | | |
| B | 3000 | 3860 | 4860 | mm |
| C | 870 | | | mm |
| D | 2100 | | | mm |
| E | 3160 | | | mm |
| H | 1960 | | | mm |

(1) After technical check.

TACCHELLA

TACCHELLA at a glance

- Our Business: Grinding.
- The Market: leading international manufacturers and high-quality grinding machines.
- The market sections: Vehicles with 4 or 2 wheels, Off-road vehicles and aviation industry. Transmissions and drive reducers. Machine tools, tool sets, dressing, tool holder.
- The activities: design and manufacture of External cylindrical and high-production grinding machines, Broach grinding machines, Sharpening machines, Universal grinding machines.
- Our driving principles: top value for the customer, state-of-the-art technology, modularity, assembly options.
- The guidelines: ongoing investments in research, design and development of innovative, patented technologies.
- Our history: over 90 years of business activity in the machine tool industry.
- Our location: the 75,000 sq. m plant is in Cassine (AL), in the Italian region home of the major Italian car makers, and 20,000 sq. m of this area are indoors.
- Our workforce: approximately 500 highly qualified and skilled employees, who represent our most valuable asset. Thanks to their expertise and passion, they guarantee the excellent quality of **IMT Grinding Group's** product and services.

The whole production process, from design to final testing takes place in-house and is managed through a comprehensive and capillary IT network (**CAD/CAE - PDM - CAM**).

The high quality level required from our grinding machines is achieved by means of highly efficient, accurate and automated CNC production systems. Strict final tests, duly equipped machining and inspection departments located in air-conditioned areas, are key to the high quality of our products.

The sales offices include approx. 50 sales agencies, which are present all over the world.

Tacchella products are the result of the synergies obtained among the designers of the **IMT group**, which always ensure product excellence and best in class technological standards with minimum lead time.

This is why **Tacchella** is a leader of this industry.

IMT GRINDING GROUP is the new industrial group that gathered under the same banner into one **Morara, De.Ci.Ma., Tacchella, Meccanodora and Favretto**, in controlled by **PARITEL Corporation**. **PARITEL HOLDING** is an industrial investment company founded in Bologna in 1989.

paritelspa.it



Metallo in movimento

IMT

www.tacchella.com

www.imtgrindinggroup.com

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